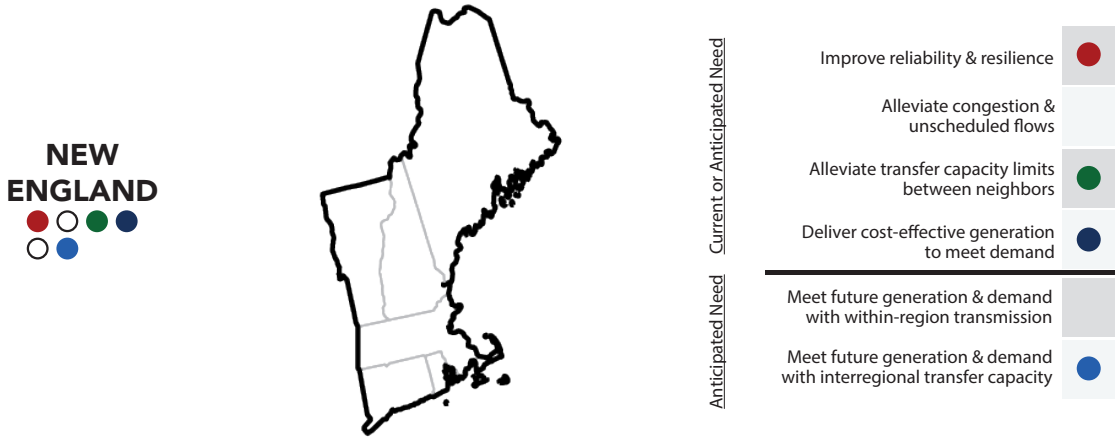
GRID DEPLOYMENT OFFICE

FACT SHEET

2023 NATIONAL TRANSMISSION NEEDS STUDY

NEW ENGLAND

The U.S. Department of Energy's Grid Deployment Office (GDO) released the National Transmission Needs Study ("Needs Study") in October 2023. The Needs Study is the Department's **triennial state of the grid** report. The Needs Study identifies transmission needs and provides information about current and anticipated future capacity constraints and congestion on the Nation's electric transmission grid. In this fact sheet, we highlight the transmission needs of New England. The Needs Study provides further detail on the benefits of transmission that could be realized throughout the country.



FINDINGS OF TRANSMISSION NEED IN NEW ENGLAND

› **Improve reliability and resilience.** Resource adequacy will be harder to maintain in a future where load is served by only variable energy resources. A robust transmission system is needed to access a diverse generation mix throughout the region. Increased interregional transmission provides resilience and consumer saving benefits during extreme weather events, as experienced by the Northeast in the January 2018 bomb cyclone event.

› **Alleviate transfer capacity limits between New England and New York.** The highest congestion value of interregional transmission in the Eastern Interconnection from 2012–2020 exists between New England and New York, with an average marginal value of transmission ranging from $16–21/MWh. A high congestion value indicates that additional transmission between the regions would reduce system congestion and constraints.

› **Deliver cost-effective generation to meet demand.** Increased interregional transmission provides resilience and consumer saving benefits, as experienced by the Northeast in the January 2018 bomb cyclone event.

› **Meet future generation and demand with additional interregional transfer capacity.** It is anticipated that New England will need between 3.4 and 6.3 GW of additional transfer capacity with New York in 2035 (median of 5.2 GW, a 255% increase relative to the 2020 system) to meet moderate load growth and high clean energy growth future scenarios.

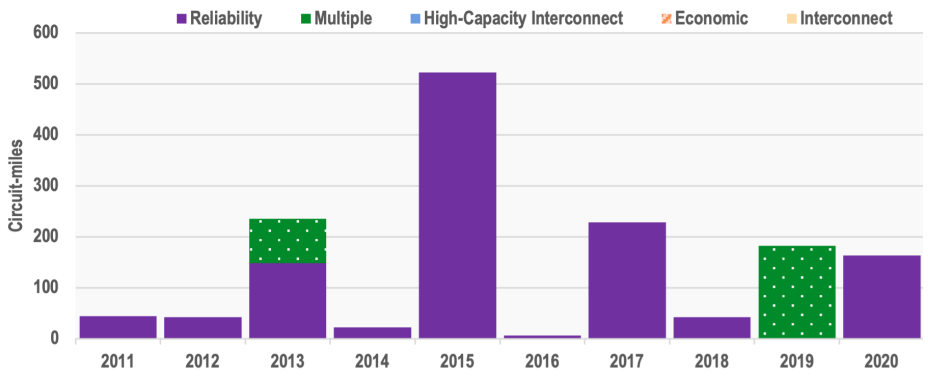
HELPFUL LINKS

› **Read the full study at www.energy.gov/gdo/national-transmission-needs-study**

› **Contact GDO with additional questions: transmission@hq.doe.gov**

FINDINGS AT A GLANCE

Circuit-miles of new or rebuilt transmission lines (≥100kV) energized between 2011–2020 by project driver.

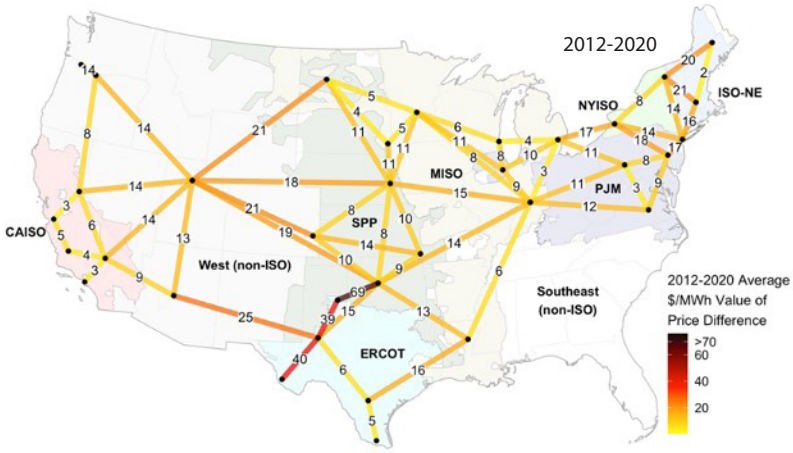


Transmission projects energized over the last decade in New England were predominantly installed to **address reliability concerns**, and occasionally to address multiple drivers.

Wholesale market price differentials demonstrate a **high value of new interregional transmission** exists **between New England and New York**.

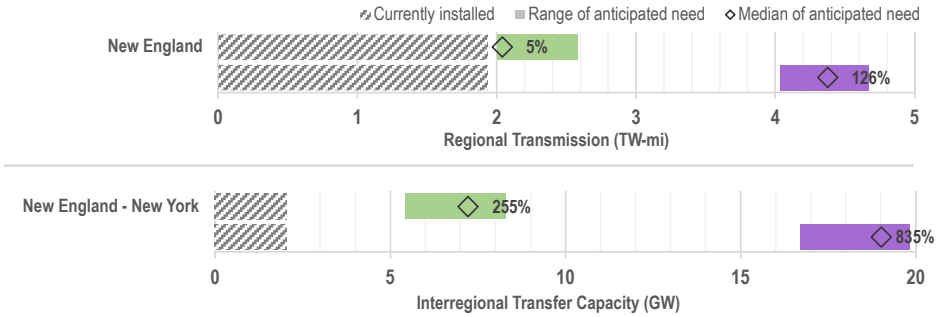
The average marginal value of transmission between New England and New York from 2012–2020 is equal to $19/MWh.

Congestion value of hypothetical transmission links between select zonal nodes within and across regions.



Note: Wholesale market price data is limited for non-RTO/ISO regions. Absence of data does not necessarily indicate that there is no need for transmission to alleviate congestion and/or unscheduled flows in non-RTO/ISO regions. Findings organized using geographic region nomenclature as described in the Needs Study.
Source: D. Millstein, et al. (2022)

Within-region transmission and interregional transfer capacity need for New England in 2035
Range of new transmission need for future scenarios with moderate load and high clean energy growth (green, top for each region) and high load and high clean energy growth (purple, bottom). Median % growth compared to 2020 system shown.



Capacity expansion modeling results for the Moderate/High scenario group suggest an anticipated need of **0.1 TW-mi of new within-region transmission by 2035** (5% growth relative to 2020) and **5.2 GW of new interregional transfer capacity with New York by 2035** (255% growth relative to 2020).

Median 2035 capacity expansion modeling results for Moderate/High scenario group.

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